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Regulation and Commitment in the Development of Telecommunications in Chile

Ahmed Galal

The private sector won't invest in asset-specific activities in telecommunications unless there is a well-designed, clearly delineated set of regulations as well as mechanisms for conflict resolution. At the same time, for regulatory reform to succeed and be credible, it must have the support of the private sector and be consistent with the country's political and judicial systems.



Summary findings

Over six decades, Chile experimented with three regulatory regimes and ownership patterns for its telecommunications sectors, each with radically different investment patterns.

Until 1970, Chile relied on private ownership and rate-of-return regulation, but excess demand persisted.

In the 1970s, Chile relied on public ownership of two regulated monopolies, but the sector grew even more slowly than before.

After 1982, Chile deregulated some market segments, introduced benchmark regulation, and returned to private ownership. The new regulatory regime and privatization doubled the number of lines in service in only four years.

Galal explains investment behavior as a function of the solutions to two contracting problems: between government and the firm, and between government and interest groups.

Galal concludes that regulatory rules on pricing, entry, and conflict resolution mechanisms are critical for investing in such asset-specific utilities as telecommunications. More important, the outcome of regulatory reform depends on a match between reform and both the prevailing political and judicial systems and interest-group politics.

According to Galal, Chile satisfactorily resolved the two contracting problems in the 1980s. Chile's new regulations are reasonably efficient and very specific about how tariffs are to be calculated, how entry is to be governed, and how conflicts are to be resolved. The rules are embodied in a law that is relatively difficult to change (because the legislature is multiple-party) and easy to enforce (because the judicial system is independent). The impetus for reform came from the emergence of a new private entrepreneurial class, whose growth depends on modern telecommunications services.

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THE ROLE OF REGULATION AND COMMITMENT IN THE DEVELOPMENT OF TELECOMMUNICATIONS IN CHILE

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I. Introduction

Chile has experimented with several types of regulatory regimes and ownership patterns of its telecommunications sector, with radically different results. Between 1930 and 1970, firms were privately owned and regulated through specific contracts. The sector only grew modestly after the initial fulfillment of agreed investment obligations. In the 1970s, the country relied on public ownership of the two firms providing the local and long-distance services as regulated monopolies. The sector grew even slower than before. After 1982, Chile deregulated certain segments of the sector, improved its regulation of others, and returned to private ownership. While this episode is still evolving, the gains to society have been substantial: new lines in service doubled in just four years, unmet demand has been declining fast, new services are being introduced, and modern technology is replacing old. Why was this last episode so much more successful than the others?

This paper explores that question, especially with respect to the role played by regulation and government commitment not to expropriate assets or quasi-rent. Though attention is paid to the specific features and influence of the regulatory regimes (e.g., pricing, entry), the focus is on how institutional factors affected the credibility of government commitment not to behave opportunistically, and the distributional demands of various interest groups. The analysis attempts to demonstrate that efficient development of the telecommunications sector depends on the proper match of regulation and country's prevailing institutions.

Three questions guide the analysis:

- What was the nature of the contracting arrangements between government and telecommunications firms in Chile over time—to what extent did these contracts clearly spell out efficient pricing rules, entry policy, and conflict resolution mechanisms?
- Given the answer to the first question, did the sector respond as expected—did the immediate incentives provided by these contracts persuade firms to commit themselves to the sector by investing, or not?
- Finally, because regulation and ownership are endogenous, can their configuration and effectiveness be explained, at least in part, by changes in Chile's political institutions and interest group pressure?

Analytically, regulation of prices and entry may or may not provide adequate price-based incentives for firms to expand. However, incentives—broadly defined—are also shaped by

institutions (see, for example, North 1990; Williamson 1989). Accordingly, the willingness of the private sector to invest also depends on whether existing safeguards can prevent opportunistic behavior by the government that would result in expropriation of assets or quasi-rents. This point is particularly important in telecommunications because asset specificity, sunk cost and economies of scale characterize certain segments of that industry. The credibility of safeguarding institutions, in turn, depends on political dynamics, interest group pressures and the degree of independence of the judiciary. Therefore, a successful regulatory regime must reasonably resolve the two contractual problems: between government and firms and between government and interest groups.

This analytical framework applies to publicly owned telecommunications companies as well, though with some modification. For example, even when pricing rules are clearly stated, managers of public enterprises--because they are appointed and removed by government--may be unable or unwilling to resist opportunistic behavior by the government, in terms of translating interest group pressure into cross-subsidization and expropriation of quasi-rents.^{1/} Moreover, under public ownership, whether investment occurs depends on the marginal benefit from expenditure in the sector versus expenditure on competing projects. Thus, tight fiscal resources and intense competing demands on these resources can result in neglecting telecommunications projects.

This paper argues that Chile, with its stable political institutions and independent judiciary over a long period of time, has always had the capacity to write credible contracts and enforce them. The limited success of the contract specific regulation between 1930 and 1970 can be traced to deficiencies in the contracts themselves, particularly with respect to the rate of return on investment (until 1958) and the conditions under which the government could intervene in the firm's operation.^{2/} That contracts were incomplete can, in turn, be attributed to the dominance

^{1/} This point is referred to as "political interference" in the literature on public enterprises. For more details, see, for example, Shirley and Nellis (1991) and Galal (1991).

^{2/} The term "intervene" is used in Chile (and here) to refer government taking control of a private firm without acquiring ownership.

of populist policies and constituencies who were little concerned with luxuries such as telecommunications. As for the limited success of publicly owned telecommunications companies in meeting demand in the 1970s, the cause seems to be a shift in ideology toward reliance on market forces and the private sector, which curbed public investment at a time when private business was still undeveloped to rely and depend intensely on telecommunications services. The success of the regulatory reforms of the 1980s can be attributed to the emergence of a more influential private entrepreneurial class and the spread of technological changes that made telecommunication services indispensable for private sector development.^{3/} These changes prompted the development of a relatively efficient regulatory regime, especially regarding tariffs.

Two important policy implications emerge from this analysis. First, regulatory reforms may not take off at all or may prove ineffective if they lack a strong constituency for reform. This point is best illustrated by the absence of regulatory reforms in telecommunications until 1958 and the ineffectiveness of the initial reforms. Second, the ability to write and enforce credible contracts does not mean that the regulatory details (tariff formulas, entry rules, and the like) are not also critical for success. This point is best illustrated by the limited development of the telecommunications sector in Chile between 1982 and 1987, when no tariff-setting procedures were specified.

Section II of this paper analyzes the regulatory episodes (or contracts between government and firms) and ownership patterns from 1930 until now. Section III traces the effect of these regulatory episodes (contracts) on the performance of the sector. The following section is devoted to understanding the relationship between political institutions, credibility of regulation and sector development. Finally, the paper concludes by drawing policy conclusions for the design of effective regulatory schemes elsewhere.

^{3/} As will be elaborated, the late 1980s also witnessed an increase in the cost of transactions (in the form of lawsuits) due to excessive deregulation. But the cost of deregulation has to be weighed against that of regulatory failure.

II. Regulatory episodes and ownership patterns

Before the Great Depression, the government was little involved in the telecommunications sector except to grant concessions. The Chilean Telephone Company was the main provider of telecommunications services, with 26,205 telephones in the entire country in 1927. Except between Santiago and Valparaíso, Chile lacked communication links between cities and an integrated network.^{4/}

To integrate different regions of the country and expand coverage, Chile negotiated a contract with the Chilean Telephone Company (Law 4791/1930) that led to the creation of Compañía de Telefonos de Chile (CTC) in 1930, of which ITT owned 80 percent. In 1964 the government created the Empresa Nacional de Telecomunicaciones (ENTEL-Chile) to provide national and international long-distance services. The two companies have dominated the sector ever since.

Chile has adopted sharply different expressions of commitment to telecommunications firms over time that fall broadly into three time periods: 1930-70, 1971-81, and 1982-present. Between 1930 and 1970 the government relied on private ownership and regulation by specific contract for CTC and public ownership and implicit contract for ENTEL. Between 1971 and 1981, the country relied on public ownership of CTC and ENTEL. Starting in 1982, Chile shifted to deregulation of certain segments of the market, better regulation of others, and private ownership. The remainder of this section analyzes these episodes, with a special focus on three key elements--concessions, tariffs and means of resolving conflicts.

Firm-specific and sector regulation, 1930-70

Though other utilities in Chile operated under a general law issued in 1925, CTC operated under a specific law (Law 4791/1930) that remained in effect until the government intervened in the company's operation in 1971. CTC's law detailed its concessions, tariffs, and conflict-resolution mechanisms. Under a 50-year concession CTC could provide local and long-distance

^{4/} For a detailed historical perspective of the evolution of the sector from inception until now, see Melo (1992).

telephone services and supplementary services. At the end of the period, the government could acquire the company, but it had to purchase the entire company and pay the owners the value of net fixed assets, excluding intangibles, expressed in pesos-gold. Otherwise, the concession would be automatically extended for 30 years, and, following the same procedure, for similar periods thereafter.

In return for the concession, CTC was required to modernize the network and connect certain regions of the country. CTC was committed to implement a specific investment program in infrastructure equipment, plant, and extensions over the next few years. The company was committed to establishing connections between the Northern border and Puerto Montt within 10 years and between Puerto Montt and Puerto Aysen within 15 years. Decisions about integrating other regions were left up to the company.

To help it meet its obligations, CTC was given the right to buy other companies throughout the country. CTC could purchase the companies on its own or on the basis of a fair price estimated by three experts, one appointed by each party and the third by the government. Furthermore, CTC was allowed a rate of return on net fixed assets of *up to* 10 percent. If the company earned more than 10 percent, the excess profits were to be divided equally between the national treasury and the company. In addition, the company was allowed to create a reserve equal to 2 percent of net fixed assets, but not to exceed an accumulated value of 20 percent of net fixed assets. Tariffs were indexed to the value of the peso in gold at the time the concession was granted. Price revisions were left to the company's board of directors, subject to government objection within 30 days.

To enforce the contract, CTC was managed by up to 15 directors, three of them appointed by the government. One of the government-appointed directors was the Director General of Electric Services; the other two were appointed (and removed) by the president. Disputes between the government and the company over the interpretation of the concession were to be resolved by the Supreme Court, without appeal.

The law stipulated a few other provisions. For example, Chilean nationals were to constitute

at least 80 percent of the company's staff. The central government and municipalities were to receive a 50 percent discount. Finally, the law gave the government the right to intervene in the company's operation in cases of internal disturbance or external conflicts. The government was obliged to compensate the company for any damage incurred in the process. In short, the contract limited government discretion in terms of outright expropriation of asset and relied on the Supreme Court for resolving conflicts. It did, however, give the government the right to intervene in the company's operation under vaguely defined circumstances, and it did not guarantee the company a specific rate of return.

CTC met its initial investment commitment. But, as time went by, expansion slowed, and ITT was accused of inflating costs. These factors prompted the government to enter into subagreements with CTC in 1958 and 1967. The 1958 agreement ensured CTC a rate of return of 10 percent on net fixed assets (instead of *up to* 10 percent). In return, CTC agreed to an 8-year investment program. Similarly, by the terms of the 1967 agreement, CTC pledged to expand the network by 144,000 lines between 1967 and 1971, and to invest sufficiently after 1971 to increase the number of lines by 6 to 7 percent a year. Costs were redefined,^{5/} and enforcement was strengthened by requiring the approval of the board of directors, including at least two of the government's representatives, for decisions on such matters as fees for financial and technical assistance provided by ITT and additions to fixed assets.

The government also used the 1967 agreement to announce its national policy for telecommunications. The essence of the new policy was that the government would assume control of the basic network in order to meet national security needs, to develop the underdeveloped regions of the country, and to guarantee the provision of efficient national and international telecommunication services. The state holding company, CORFO, would purchase up to 49 percent of the shares of CTC.^{6/} A long-distance market would be carved out for the

^{5/} For example, net fixed assets now exclude construction in progress, operating capital is estimated as one-sixth of gross annual revenue, interest on operating capital is estimated at 6 percent, and depreciation is 5 percent.

^{6/} The purchase price was the book value of the shares in constant gold-peso, converted into current pesos at the annual weighted average of the monthly exchange rate.

newly created state company, ENTEL. (See Agurto 1991).

The government created ENTEL by decree 5487 in December 1964. Why it did so remains unclear. Explanations range from meeting the interests of the army to facilitating Chile's participation in the World Cup in 1962. Whatever the explanation for its creation, the company was established only to offer long-distance services--even though CTC's concession was not exclusive and the government had played a dominant role in the economic activity since 1930.

ENTEL operated under provisions of the general law of electricity, gas and telecommunications (DFL 4 of 1959), which governed all utilities except CTC. The terms of this law were very similar to the terms of CTC's contract. Tariffs were to be set to allow the company a 10 percent return on the sunk cost of useful capital, defined as the replacement cost of construction, plants, other fixed assets, and working capital; intangible assets were not to exceed 5 percent of the value of fixed assets. The Superintendency of Electricity, Gas and Telecommunications was responsible for implementing the law, and a new Tariff Commission for revaluing net fixed assets. The commission was composed of the Superintendent of Electric and Gas Services (as chair) and representatives of the president, the Ministry of Economy, CORFO, and the National Planning Office.

The law also stipulated that tariffs would be revised every five years, with interim adjustment for inflation. If the firm's rate of return exceeded 12 percent, the Superintendency of Electric, Gas and Telecommunications Services could set provisional tariffs that would reduce excess profit by 50 percent. Excess profits were to be deposited in a special account, to be amortized in the case of profit shortfalls. If the rate of return fell below 10 percent, the firm could request new tariffs.

Regulation versus public ownership, 1971-81

Invoking a clause of the 1930 law, the Allende administration intervened in CTC's operation in 1971. The 1930 law was revoked in 1973, and after that CTC operated under the General Law of 1959. In 1974, CORFO acquired the company from ITT, despite the *laissez-faire* policy

of the military regime on almost all other economic matters. Thus, during the 1970s the telecommunications sector was dominated by publicly owned enterprises. CTC provided local telephony throughout the country, except in regions X and XI and the Pascuas Island (which were served by the Compañía Nacional de Telefonos, the Compañía de telefonos de Coyhaique and ENTEL). ENTEL provided national and international long-distance services. And Correos and Telegrafos provided domestic telex and telegram services, sharing the market for international services with ITT and Transradio.

Though CTC and ENTEL were both supposed to operate under the regulatory rules of 1959, public ownership made a big difference. For example, under the system of concessions laid out in the law of 1959, any public or private corporation could provide any service, except for domestic telegraph and telex services. In practice, however, the government assigned public local telephony to CTC and long-distance services to ENTEL. Conflicts between CTC and ENTEL were for the most part resolved by CORFO, their joint owner. A former government official explained that whenever disputes escalated between the two rivals, top management of the two companies was shuffled around.

Similarly, the 1959 regulation gave firms the right to earn a rate of return of 10 percent on net fixed assets. Yet during the 1970s tariffs were often adjusted below inflation, especially in the early years of the decade. As a result, CTC and ENTEL lacked the resources to expand, develop new products or adopt new technologies. In addition, there was cross-subsidization between local and long-distance services, which intensified the vertical and horizontal integration of the two government-owned firms.

Finally, the 1959 regulation vested regulatory authority in the Superintendency of Electricity, Gas and Telecommunications and the Tariff Commission. In practice, CORFO, as the owner of the two companies, played a more active role. Further, the top management of both companies was appointed by the president largely from the ranks of the military. In 1977, when SUBTEL had replaced the Superintendency of Electricity, Gas and Telecommunications and the Tariff Commission as a regulatory agency in telecommunications, the companies were headed by

generals and SUBTEL a colonel. Respect for rank meant that the two companies were essentially left on their own.

In 1978, a new telecommunication policy was announced that was more consistent with the *laissez-faire* policy of the government since 1973. The policy emphasized the importance of the sector to economic development, the role of the private sector, and the need to eliminate any favorable treatment of state enterprises. Several other principles were also announced. Public services of telecommunications, radio-diffusion and television were normally to be provided by the private sector. Concessions, where required, would be granted on the basis of objective criteria, specified by law. Tariffs would be freely negotiated between the suppliers and clients, except where markets were not competitive. Until 1982, however, this new policy remained merely a statement of intentions.

Deregulation and evolving regulation, 1982-present

Deregulation. In 1982, Chile introduced a new framework for telecommunications, based on market principles. The General Law of Telecommunications (Law 18,168/1982) places no limitations on the number of concessions that can be granted to provide a specific service, except for technical reasons. Concessions are required only to provide local and long-distance public services, cellular telephony, point-to-point private transmission, and private data transmission. No concessions are required to provide yellow pages, facsimile services, sale and leasing of telephone and facsimile equipment, private exchanges, and supplementary services.

The General Law of 1982 stipulated that interconnection among concession holders of public services is obligatory and must comply with the technical norms established by SUBTEL. The terms of interconnections were left to the parties themselves. Prices were to be determined by market forces, except where markets were imperfect. In those cases, the rates would be set by the Ministries of Economy and Telecommunications on the basis of the direct and necessary cost of providing the service.

The rules were quite sweeping, and in several important areas they lacked adequate

specificity. The law was ambiguous about the right of regulators to refuse to grant concessions. As a result, there was a proliferation of concession requests, especially to provide the more profitable services. On tariffs, it was short on implementation. Thus, tariffs continued to be set through informal negotiations between the companies and SUBTEL and the Ministry of Economy. Cross-subsidization also persisted, and prices remained divorced from costs. Finally, SUBTEL's role was not well defined, nor did it have the resources to perform all the tasks assigned to it.

In effect, the new law provided an implicit contract that was too incomplete to ensure producers a fair rate of return on investment or consumers the right to have a phone within a well specified period. Not surprisingly, the regulatory story since then has consisted primarily of attempts to remedy these deficiencies.

Further adjustments and privatization. Several of these problems were addressed in 1985. The right of SUBTEL to reject concession applications was clarified, and an arbitration process was introduced to resolve problems of sharing the cost of interconnections between existing companies and newcomers. The role of SUBTEL in resolving legal, procedural and technical disputes among service providers and users was clarified.

The issue of universal service and tariff setting were left unaddressed, however, until 1987, when the 1982 General Law was modified to prepare the way for the privatization of CTC and ENTEL. The new law (DFL 1 of 1987) stipulated that requests for service must be satisfied within two years, though a 10-year grace period was allowed, given the backlog of unmet demand. To ease the financing burden on the companies, they were allowed to request reimbursable financial contributions from customers applying for new telephones. The contributions could be reimbursed in bonds, shares of the company, or any other mutually agreed form.

Equally important, the law introduced a new tariff scheme (as explained in Box 1) for local and long-distance fixed telephony, and an arbitration process to settle disagreements between the firms and regulators. The law also defined the criterion, methodology, procedures, and timing for tariff setting for local and long-distance telephony, as well as the agencies in charge of setting

them. Prices of all other services were left to the determination of market forces.

The new tariff regime is theoretically neat. It is based on rate of return regulation for a theoretically efficient firm. The incremental cost of each service is first calculated, given projected demand and operating and capital costs. The sum of these costs is equal to the long-run marginal cost, which--because of economies of scale--results in a deficit. To recover cost and induce expansion, tariffs are adjusted upward in such a way as to minimize distortions.

In 1988, CTC and ENTEL submitted their proposals to the Ministries of Telecommunications and Economy through SUBTEL. A new set of maximum tariffs became effective in 1989, for the next 5 years. The rates phase out cross-subsidization between local and long-distance services. CTC was allowed a 12 percent rate of return, and ENTEL a 14 percent rate of return because revenue from long-distance service is more volatile.

On-going/pending reforms. Two main problems remain. First, SUBTEL is still a relatively

Box 1: Price setting procedures for fixed telephony

1. Demand is first estimated for each service/zone/firm bundle.
2. For each service, the incremental cost of development is then calculated based on the concept of "efficient firm". The incremental cost of development is nothing but the long-run marginal cost (LRMC) adjusted for investment. The law defines the efficient firm as one that starts from scratch and uses only the assets necessary to provide that service. It further stipulates that regulated companies have to have a minimum of 5-year investment program, prepared by the company and presented to SUBTEL following the detailed outline specified in Law 18,168 (article 301).
3. Revenue is then estimated for each service, such that the net present value of providing the service is equal to zero. This revenue is the incremental cost of development.
4. To move from the incremental cost of development to the long-run average cost (LRAC), efficient tariffs are increased in a least distorting fashion so that firms make a fair rate of return.
5. The fair rate of return is defined as the sum of the rates of return on the risk-free assets and the risk premium of the activity, weighted by the systematic risk of the industry. That is

$$R_i = R_f + \beta_i (R_p - R_f),$$

where R_i is the rate of return on revalued capital of firm i , R_f is the rate of return on risk-free assets, β_i is firm i 's systematic risk, and R_p is the rate of return on a diversified investment portfolio.

6. Tariffs are recalculated every five years, so the law allows firms to adjust tariffs every two months, using the inflation index of each service and the Divisia index.
7. Disputes between companies and regulators are settled by a committee of three experts, one nominated by each party and the third by mutual agreement.

weak regulatory body. Unlike other regulatory agencies in Chile, SUBTEL is neither financially nor administratively independent. It falls under the Ministry of Transportation and Telecommunications, and its staff are subject to the civil service code. The agency also lacks the resources to undertake necessary studies. As a result, SUBTEL has not been able to attract or retain the right mix of skilled staff to handle its regulatory functions effectively.

The second problem concerns market segmentation. CTC and ENTEL had been able to coexist relatively peacefully for a long time, largely because both firms were owned by the government. However, the competitive relationship between the two companies intensified dramatically following their privatization in 1988 and 1989. Both firms are trying to maximize profit, but the long-distance market is more lucrative than the local market. This rivalry is causing costly disputes (as will be discussed below), and efforts are being made to address these problems, in part by introducing a multi-carrier system in the long-distance market.

Summary

Chile has experimented broadly speaking with three regulatory regimes and ownership patterns in telecommunications. Though different in many ways, they shared several features: rate of return regulation, free entry, and explicit conflict resolution mechanisms, whether for tariffs, or end-of-concession compensation. The main differences between these regulatory regimes are as follows. Up till 1958, firms were not ensured a specific rate of return, nor were they guaranteed that the government would not intervene in their operations. The first deficiency was corrected in 1958, but the latter remained in effect and was used by the government to take over the operation of CTC in 1971. In the 1970s, though the regulatory rules of 1958 were reasonably well conceived, they were not applied in practice because both CTC and ENTEL were publicly owned. Only in the 1980s did the government combine private ownership with relatively efficient regulatory regime, though some market boundaries were left unidentified. One of the most interesting and innovative features of this regulatory regime is benchmark regulation.

II. Consequences of regulatory reforms

How did these regulatory episodes affect the development of the telecommunications sector? In particular, what effect did they have on services, prices, returns on investment, and overall welfare? And, what effect did the lack of definition of market boundaries in recent reforms have on the behavior of firms?

Services, prices, profit and economic welfare

Telecommunications services. Whatever measure of telephone expansion is used--numbers of telephones, installed lines, lines in service, density, automatization and digitalization, or investment--expansion is most dramatic in the 1980s and lowest in the 1970s (figures 1 through 4). The number of telephones grew at an annual rate of nearly 9 percent during 1981-91, but at only 4 percent during 1971-81 (table 1). In the period before 1970, network expansion was uneven, proceeding fairly rapidly at 7.3 percent a year in 1934-48, slowing to 2.6 percent in 1948-57, and picking up again to 6.8 percent in 1957-70. As would be expected, pending applications for telephone installations (as a share of lines in service) were high in the periods preceding expansion. Somewhat unexpectedly, pending applications have increased in recent years, even as the network was being doubled, reflecting a surge in demand and higher expectation by consumers of getting a telephone installed.

Table 1. Telephone expansion in Chile, 1934-91
(annual growth rates)

| | 1934-60 | 1960-70 | 1971-81 | 1981-91 |
|---------------------------------------------------|---------|---------|---------|---------|
| Telephone in service | 5.6 | 6.7 | 4.2 | 8.9 |
| Line in service | N.A. | 7.5 | 3.9 | 9.9 |
| | 1960 | 1970 | 1981 | 1991 |
| Telephone applications (% of Lines in service) | 54 | 25 | 42 | 24 |
| Telephone density | 2.7 | 4.1 | 5.4 | 10.8 |

Source: CTC.

Figure 1 Number of Telephones in Service (CTC), 1934 - 91

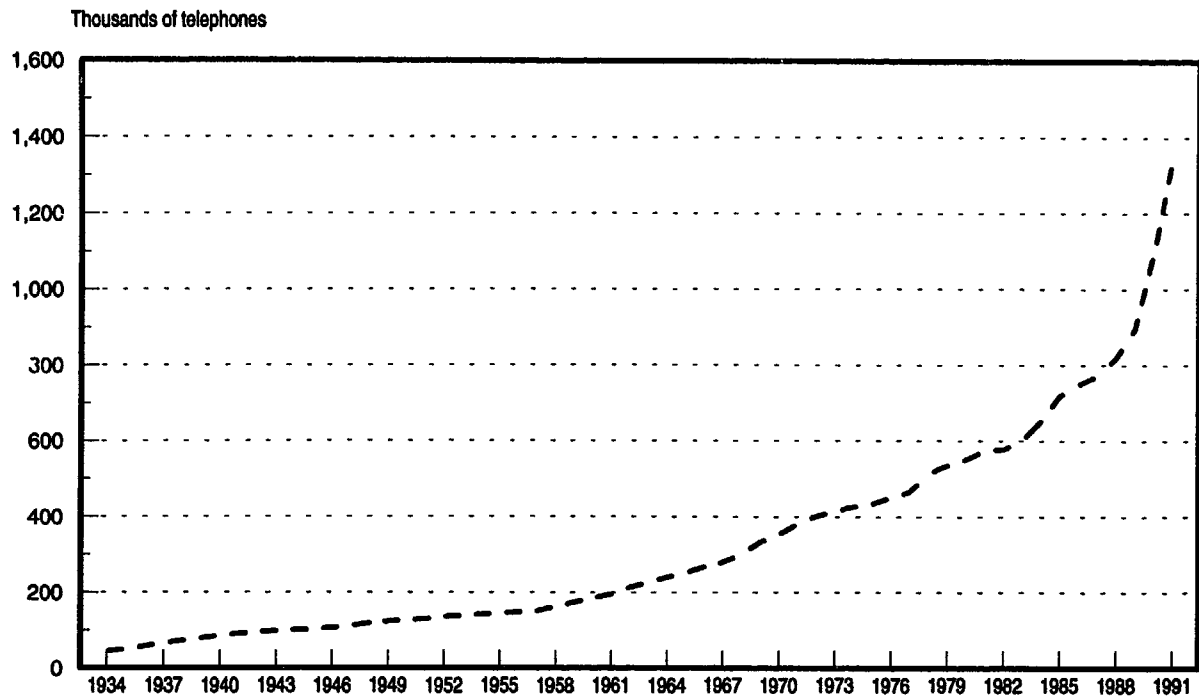


Figure 2 Basic Network Expansion (CTC), 1960 - 91

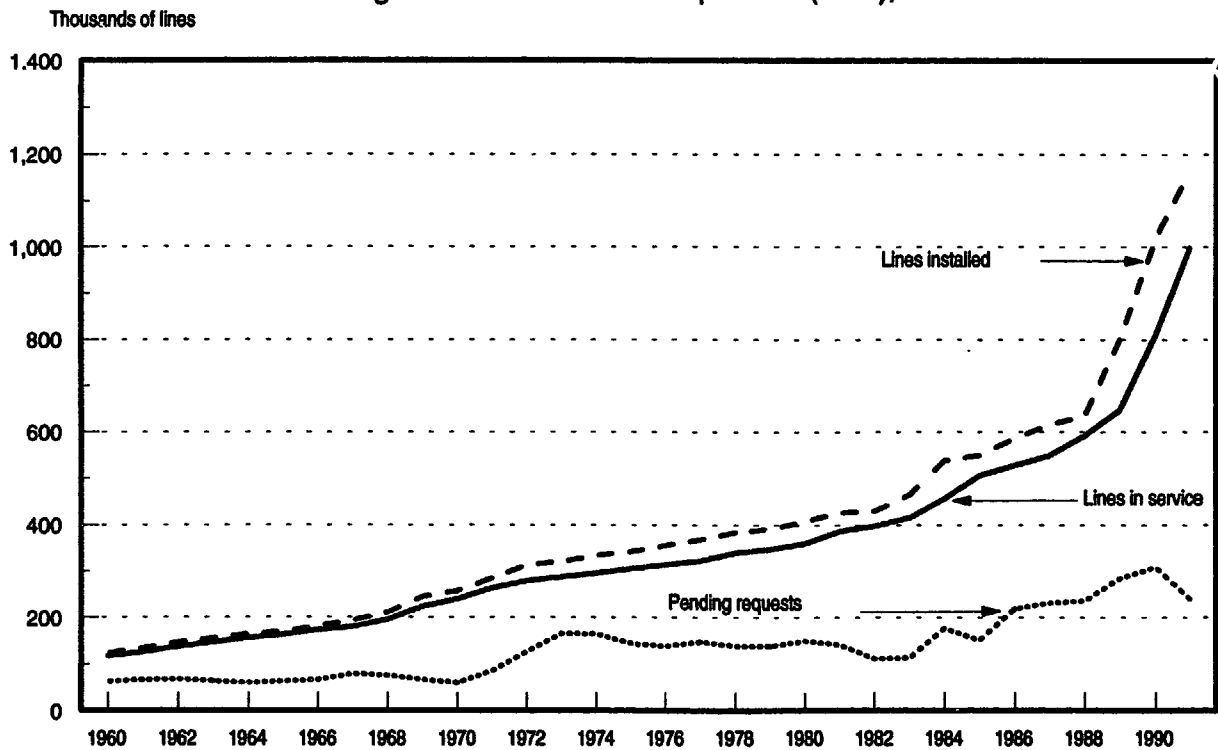


Figure 3 Fixed Capital Formation (CTC), 1960 - 91

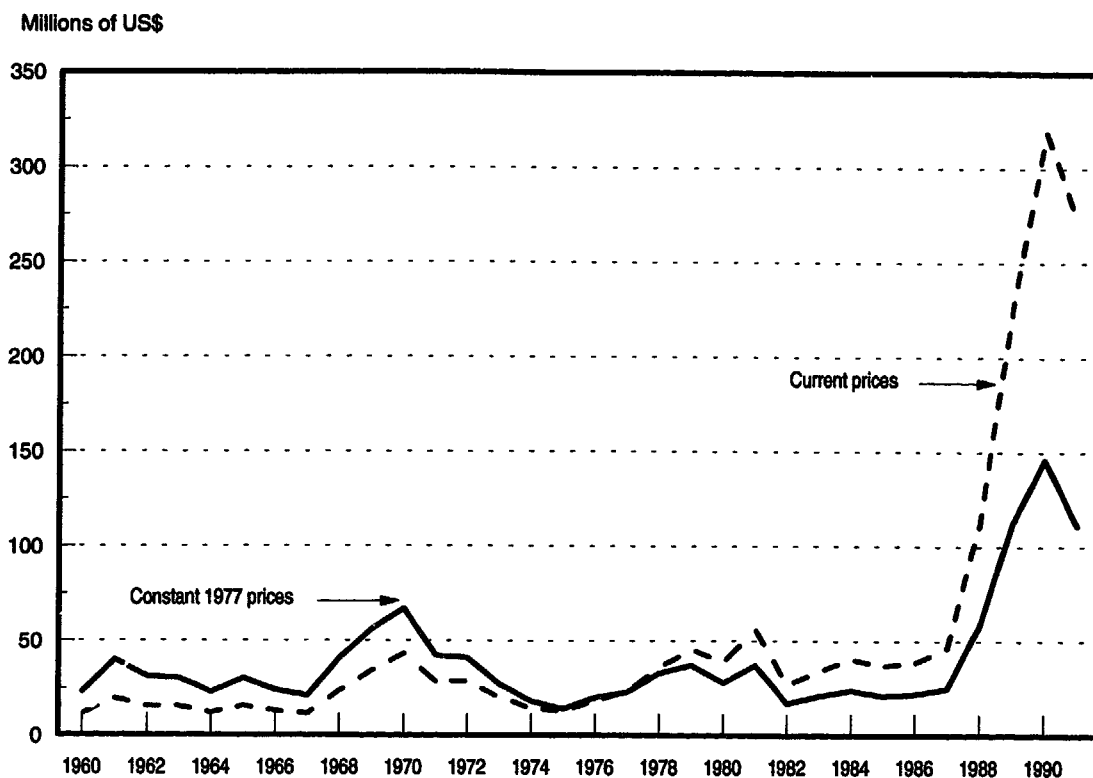
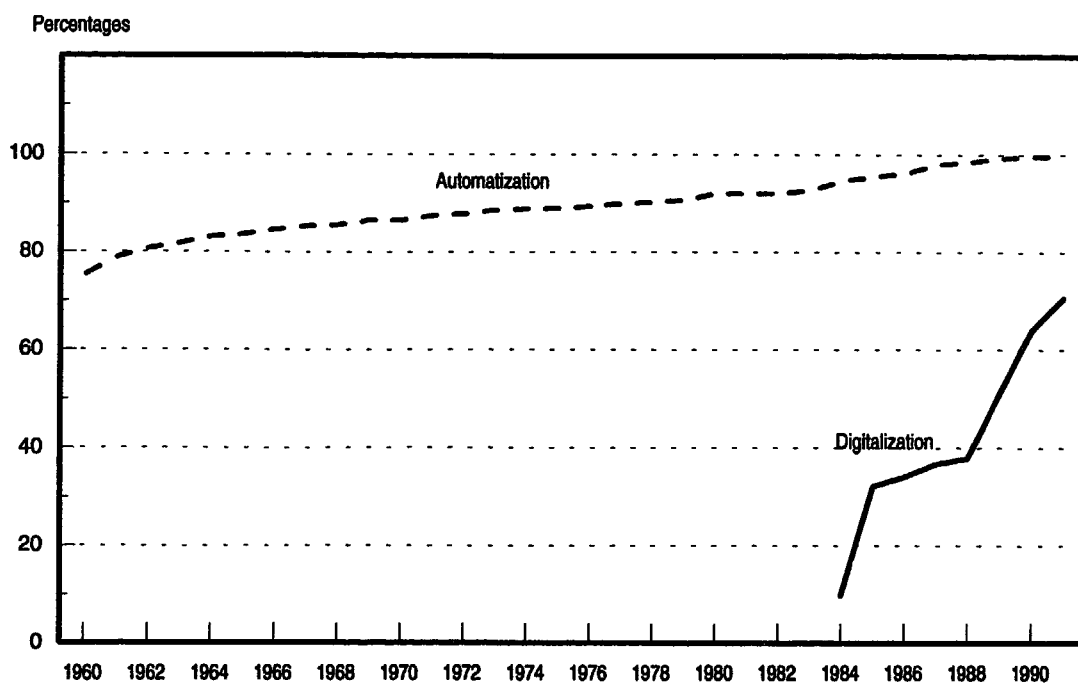


Figure 4 Automatization and Digitalization of Lines (CTC), 1960 - 91



The same pattern emerges for national and international long-distance services, (figures 5 and 6). There was a dramatic increase in these services following ENTEL's privatization and CTC's expansion. In that sense, it can be said that ENTEL's sale to the private sector relaxed the resource constraint experienced under public ownership and that CTC's expansion made it possible for a larger number of consumers to make long-distance calls.

There was also an explosion of value-added services in the 1980s, and in the number of providers of these services. Consumers now enjoy a number of new services such as paging, mobile telephony, and data transmission. CTC-Cellular and CIDCOM provide mobile telephony services in the Santiago metropolitan region and Region V, and VTR-Cellular and Telecom-Cellular serve the rest of the country. International communications are provided by two interrelated firms, Telex-Chile and TEXCOM, and by VTR and ITT World communications. VTR, Chile-Pac, and ECOM provide data transmission. Finally, there has been a huge expansion in the market for equipment, including telephone sets, modems, private exchanges, and other consumer premises equipment.

In short, the regulatory reforms of the 1980s coincided with the period of fastest expansion of the network, and provision of new services. Public ownership and tight fiscal policy effectively blocked expansion in the 1970s. And in the preceding years, CTC slacked off once it had fulfilled its contractual obligations of the 1930s until its contract was modified in 1958 to ensure a 10 percent rate of return.

Prices. Establishing price trends for telecommunications services over long periods is difficult because prices differ in their composition between fixed and variable charges, for peak and off-peak periods, and flat and metered systems. Nevertheless, certain observations can be made about price trends, using available data (figures 7 and 8). The real prices of local services declined in the early 1970s, following Allende's election.^{7/} Prices picked up in 1974 and have been on the rise ever since with the exception of 1984. Real prices of long-distance services also declined in the early 1970s, and this trend has persisted ever since. Both trends reflect continuing efforts to reduce cross-subsidization from national and international long-distance services to local services, and from commercial to residential subscribers. This effort began in 1981 by gradually replacing the flat rate system by the metered system, but not until 1989 did the price schedule formally incorporate the complete phaseout of cross-subsidization (table 2).

^{7/} Real prices are obtained using the consumer price index, with 1977 as the base year.

Figure 5 National and International Telecommunications Traffic (ENTEL), 1973 - 91

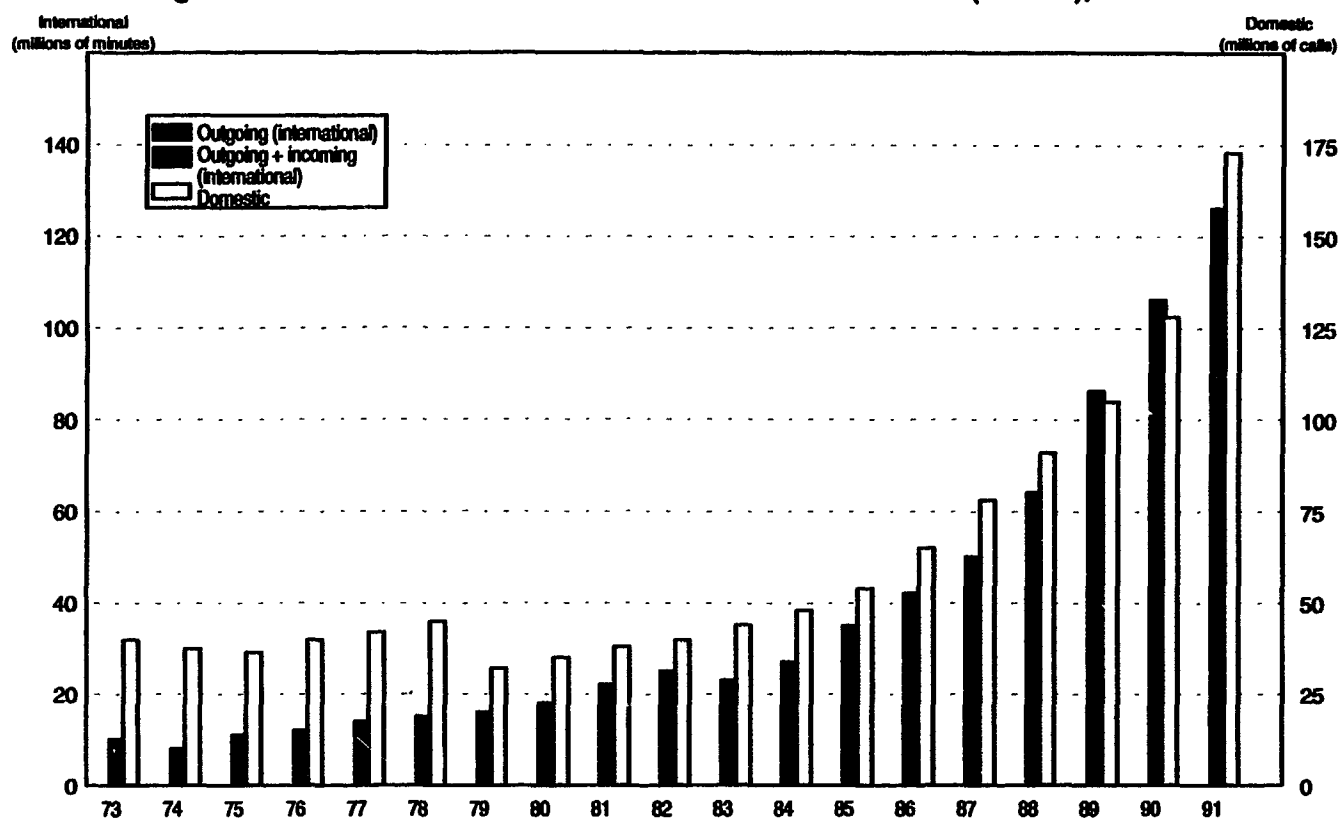
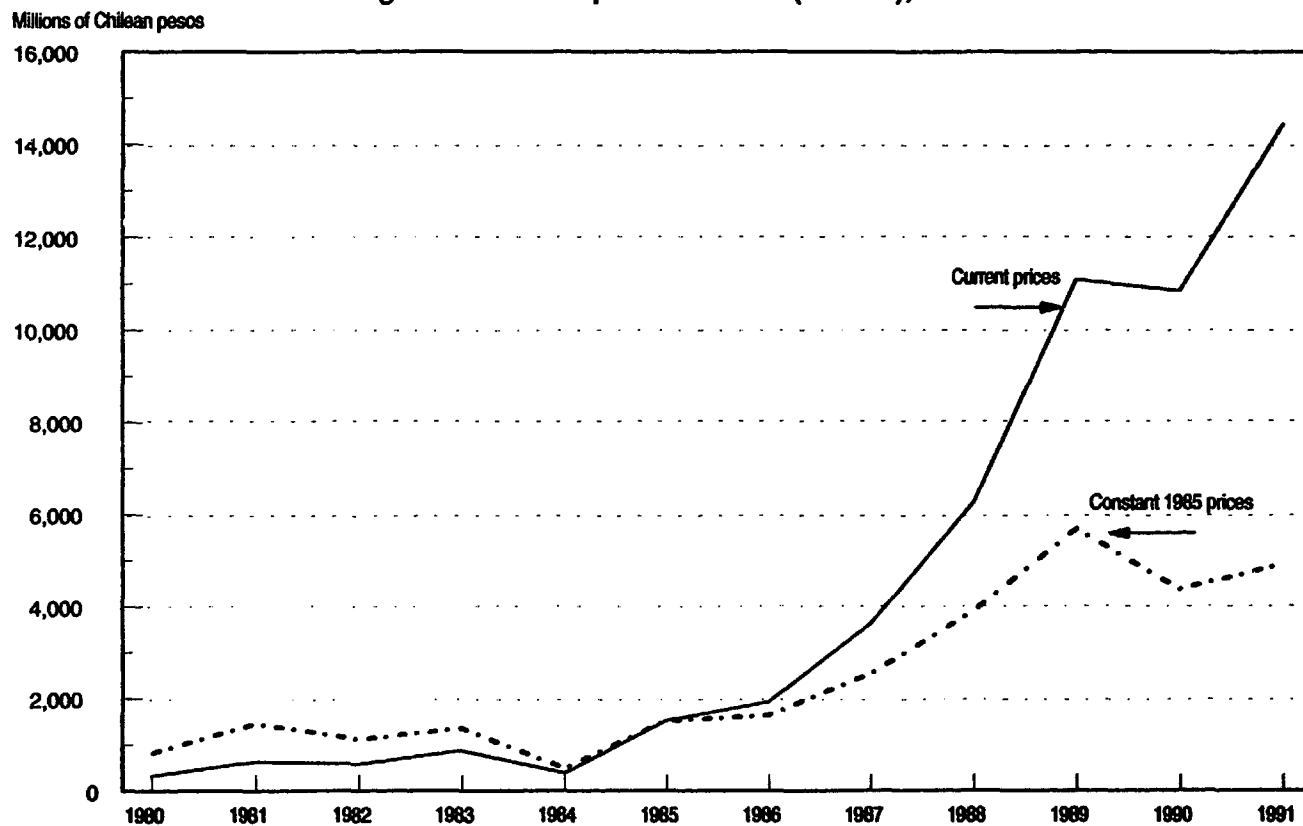
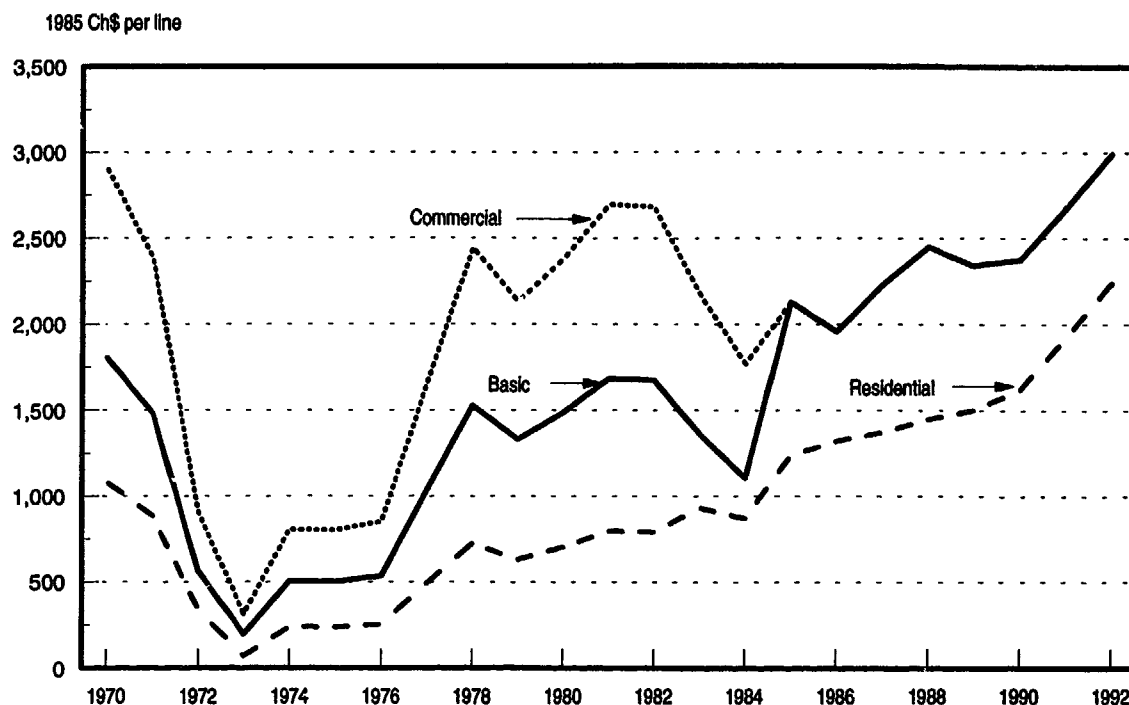


Figure 6 Fixed Capital Formation (ENTEL), 1980 - 91

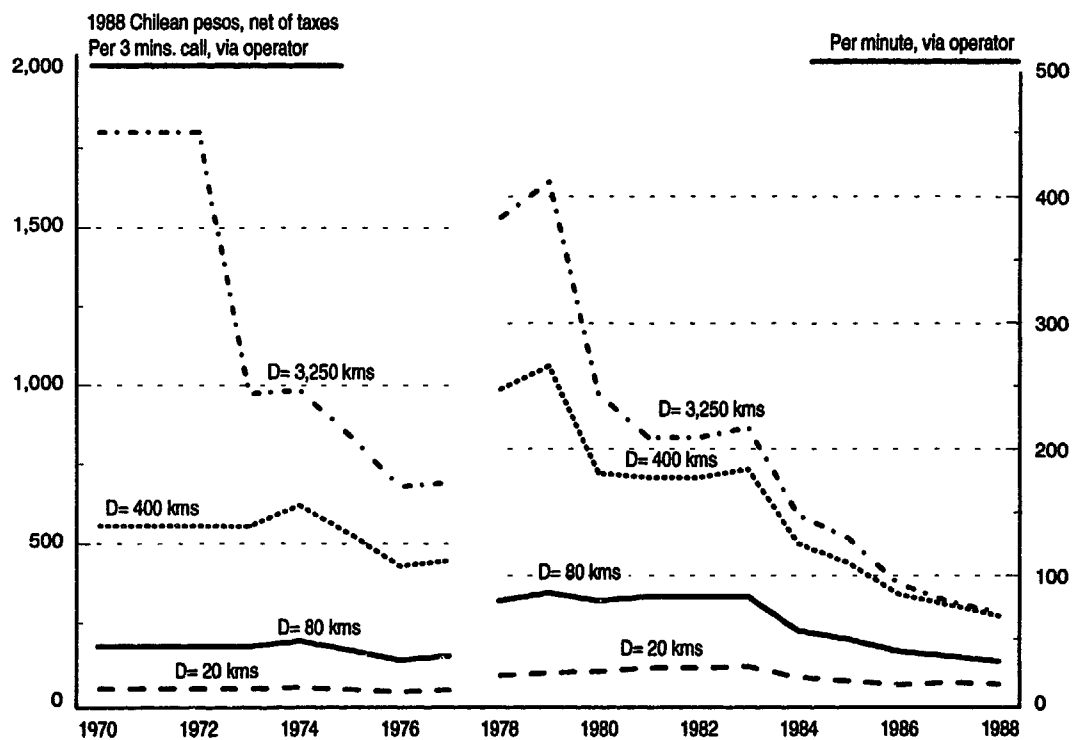


**Figure 7 Monthly Charges for Local Services,
Flat Rate System, 1970 - 92**



Note: December rates of each year, except for August 1992.

Figure 8 National Long Distance Tariffs, 1970 - 88



In short, with the exception of the early 1970s, prices of local services kept up, and even surpassed, inflation. In the market for long-distance services, prices have been declining consistently in real terms, largely to eliminate cross-subsidization. The question is whether these tariffs provided firms with adequate returns on their investment.

Table 2. Telephone price schedule, 1989-93
(September 1989 rates = 100)

| | 1989 | 1990 | 1991 | 1992 | 1993 |
|-----------------------------|------|------|------|------|------|
| Local metered service | | | | | |
| Monthly charge | 100 | 123 | 138 | 154 | 171 |
| Variable charge | 100 | 100 | 100 | 100 | 100 |
| Local flat rate service | 100 | 114 | 125 | 136 | 147 |
| National long-distance | 100 | 80 | 74 | 65 | 65 |
| International long-distance | 100 | 100 | 100 | 100 | 100 |
| Allocation fee | 100 | 82 | 25 | 12 | 0 |

Source: CTC.

Profit. Since 1958, firms have been assured a rate of return of 10 percent--even higher since 1989--on the sunk cost of useful capital. However, trends of profitability on revalued assets reveal significant differences between CTC and ENTEL, and over time (figures 9 and 10).^{8/} To the extent that the reported rates of return are believable, several observations can be made. CTC's rates of return were positive in the 1960s, but below 10 percent. In the early 1970s, the company even made losses. Only in the period following privatization in 1988 did CTC have rates of return higher than 10 percent. ENTEL, by contrast, consistently had rates of return of more than 10 percent in the 1980s. In recent years, the company's rates of return have even exceeded 40 percent on revalued assets, despite the decline in its prices.

The rates of return on revalued assets have to be interpreted with caution, however. They underestimate the rates of return actually received by the companies by the extent to which the denominator is inflated by depreciation. Nor can these rates be used to establish whether CTC and ENTEL received the 12 and 14 percent rates of return to which they have been entitled since 1989 because they are based on revenue from both regulated and unregulated services.^{9/}

^{8/} No information could be obtained before 1960 for CTC and before 1979 for ENTEL.

^{9/} It was not possible to correct for these factors.

Figure 9 Return on Net Fixed Assets, 1960 - 90

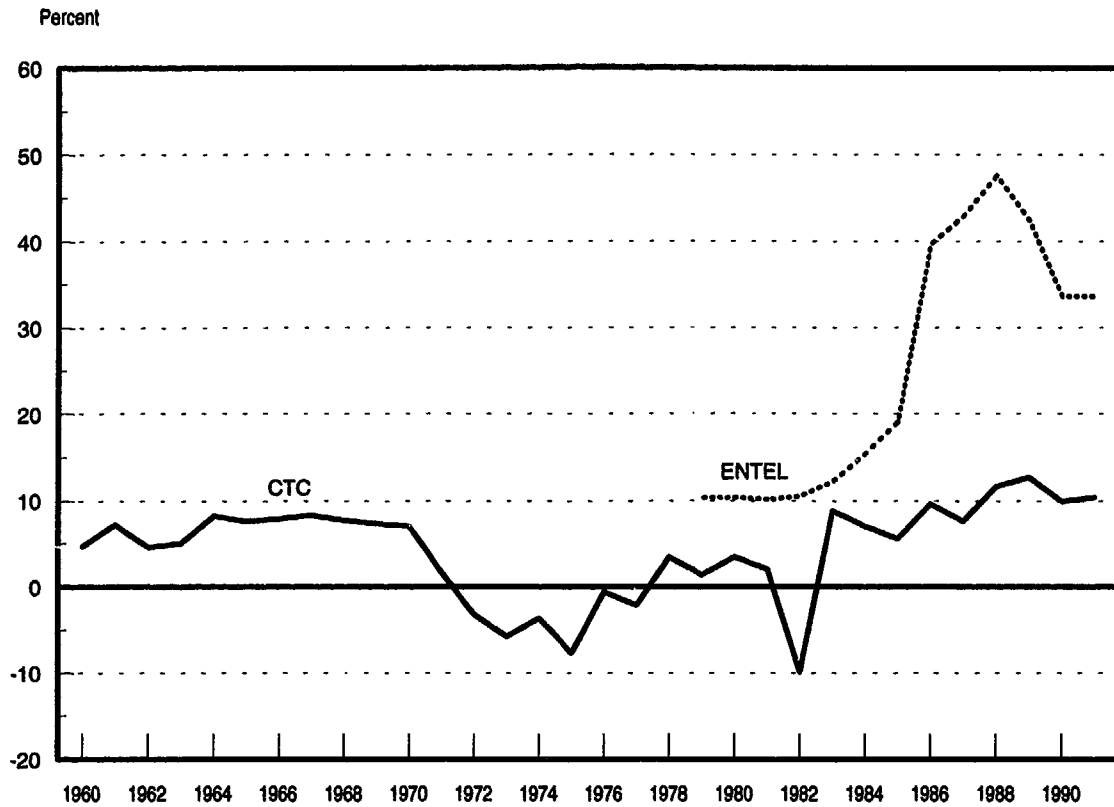
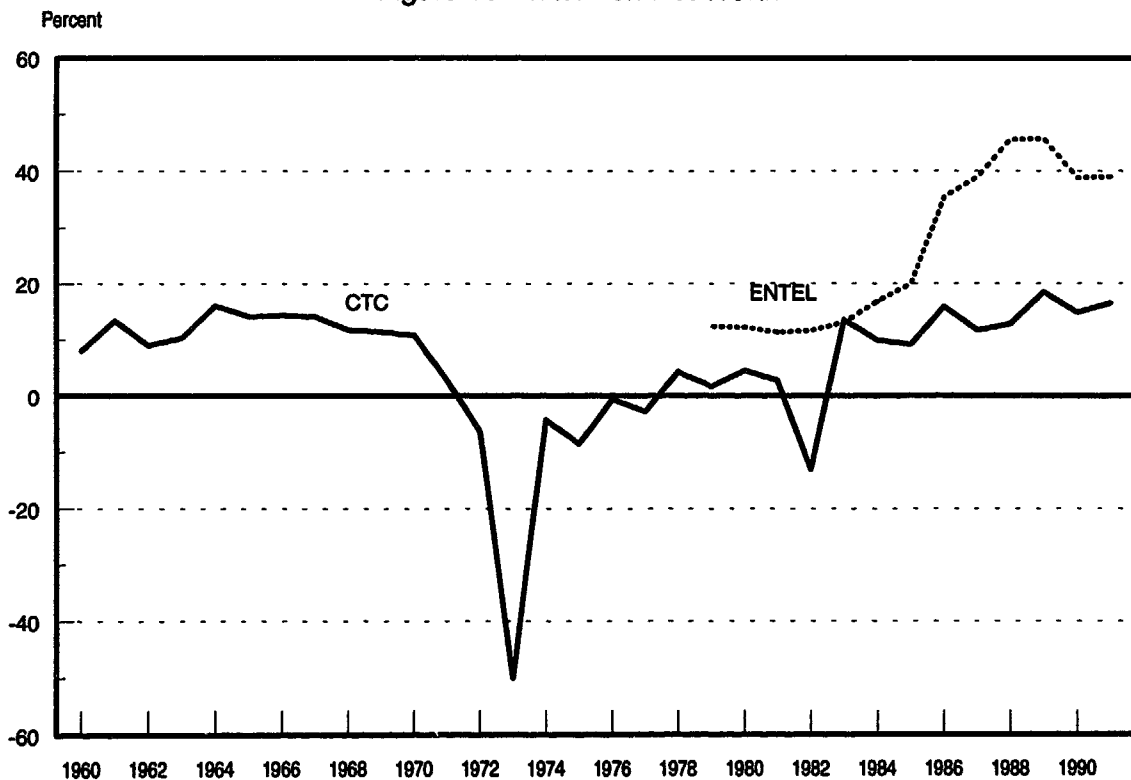


Figure 10 Return on Net Worth



CTC's rates of return on networth approached or exceeded 10 percent during the 1960s and 1980s, except in 1982 (figure 10). Under public ownership in the 1970s, CTC's rates of return were even negative early in the decade. As for ENTEL, recent data for the 1980s indicate that the company has had rates of return far higher than any reasonable return on investment in telecommunications. This windfall profit is due largely to revenue from international incoming calls.

Overall change in welfare. Consumers can be said to be better off the larger the network, the better the quality of service, and the lower the price, and producers to be better off the higher the tariffs and the greater the return on investment. Competition would be expected to reduce returns for competitors, and expansion of the network would be expected to benefit providers of complementary services. An assessment of the welfare impact of regulatory reforms must sum up these effects to reach a bottom line conclusion.

This kind of analysis has been performed for CTC: the social net present value of CTC under private operation was subtracted from its simulated value under continued public ownership (Galal and others, forthcoming). The analysis concluded that privatization and regulation in the 1980s improved the welfare of Chileans, as well as foreigners (table 3). Consumers were the biggest winners, but shareholders, government, and interestingly, ENTEL (which benefitted from CTC's expansion) also gained.

Table 3. Welfare effects of privatizing CTC
(1988 net present values; billions of pesos)

| | CTC | | Net gains from privatization |
|------------------------|----------------------------|---------------------------|------------------------------------|
| | Under private operation | Under public operation | |
| Government | 97 | 64 | 33 |
| Domestic shareholders | 19 | 11 | 8 |
| Consumers | 1104 | 588 | 516 |
| Competitors | 43 | 27 | 16 |
| Total domestic welfare | 1263 | 690 | 574 |
| Foreign Shareholders | 39 | 0 | 39 |
| Total world welfare | 1301 | 689 | 612 |

Source: Galal and others (forthcoming 1994).

While no similar analysis exists for ENTEL, a broad conclusion based on the partial indicators noted above is that ENTEL's expansion and lower tariffs must have benefitted consumers. Yet, ENTEL's excessive rates of return indicate that consumers could have done much better. Alternatively, government could have spent the windfall gains from incoming calls to expand rural telephony or other similar projects.

Anticompetitive behavior and transaction costs

Notwithstanding these positive effects, the recent regulatory reforms and privatization have also resulted in a large number of lengthy and costly lawsuits alleging anticompetitive behavior.^{10/} Several factors lie behind these claims, including an excessive reliance on market forces to define market boundaries, the drive for profit maximization following privatization, the industry's large sunk costs, and strong incentives for vertical integration, cross subsidization, and cream skimming. Whatever the motives, these lawsuits have increased the transaction costs of conducting business and burdened the courts. A few cases are briefly reviewed below, to illustrate the nature of these disputes and how conflicts are resolved.

Local fixed telephony. To promote competition and private sector participation, SUBTEL granted concessions to a number of small companies in 1981 to provide local fixed telephony services in certain regions of the country, some of them overlapping with CTC's concession areas. These firms filed several antitrust complaints, accusing CTC of infringing on fair competition.^{11/} The Commissions ruled against CTC for anticompetitive behavior in all instances, according to Coloma and Herrera (1990).^{12/} But the costs incurred in the process

^{10/} For an analysis of these disputes, see Coloma and Herrera (1990) and Parades (1987). For a review of disputes under Chile's first antitrust law of 1959, see Furnish, (1971).

^{11/} These firms also suffered from inefficient plant size. The extent of economies of scale in Chile has been studied by the Economics Department of the University of Chile (1987), and described in Ale (1989). These studies show that the elasticity of total cost with respect to output varies between 0.5 and 0.95, depending on plant size.

^{12/} According to Decree Law 211 of 1973, conflicts pertaining to anticompetitive behavior are resolved first by the thirteen Regional Preventive Commissions at the local level, and then by the Resolutive Commission. Decisions of the Preventive Commissions can be appealed to the Resolutive Commission and finally to the Supreme Court. To ensure neutrality, the Resolutive Commission is made of five members: the Chief of the Supreme Court as chair (appointed by his tribunal), two government representatives (appointed by the Ministers of Economy and Finance), and a dean of a law school and of an economics department (selected at random). The members of this commission remain in office for two years.

could have been avoided had the market for local fixed telephony been better defined to avoid overlapping concessions.

Most of the complaints concerned interconnections. In general, a new firm is required to provide transmission and switching equipment to interconnect its customers and to connect its network with other companies. This entails investment by the new company in the local network and investment by the new and existing companies in interconnection. Interconnection costs are shared by agreement between the parties involved subject to rules set by SUBTEL. The problem, of course, is that the incumbent is not likely to negotiate in good faith because of an inherent conflict of interest. Thus, even after agreement is reached on cost-sharing, CTC can still find plausible reasons to delay installation.

Long-distance markets. The same weakness affected the market for long-distance services. The government could have anticipated in the early 1980s the lack of compatibility between free competition (and multiple concessions) and the absence of a multi-carrier system in the long-distance market. Failure to recognize this problem led, following the privatization of CTC and ENTEL, to a lengthy and costly lawsuit that is still working its way through the judicial system.

The story began in June 1989 when CTC applied--through its subsidiary CTC-Transmisiones Regionales S.A.--for a concession to provide domestic long distance services through satellite links. In September 1989, CTC also applied for a concession to provide domestic long-distance services in the Santiago-Valparaiso and Santiago-Temuco markets through a fiber optics cable system. ENTEL objected to CTC's applications, arguing that the concessions would give CTC monopoly influence.^{13/} CTC replied that its participation would enhance competition and introduce advanced technology in the sector.

SUBTEL referred the matter to the Fair Trade Enforcement Office, requesting a ruling on the following questions: How would competition be affected by vertical integration? Can the local and long-distance services be considered different markets? And should local companies be prevented from participating in the long-distance market?

In October 1989 the Preventive Commission, the first tier in the dispute-resolution process,

^{13/} In retaliation, ENTEL's subsidiary, Global Telecomunicaciones S.A., applied in April 1989 for concessions to provide local service in specific business sectors of Santiago. CTC accused ENTEL of cream skimming, arguing that the Telecommunications Law does not allow a concession holder to carve out a specific area within an existing concession for a new concession. CTC also objected to the tariff system to be applied, arguing that the guidelines for the tariffs must be similar to CTC's. This dispute is still pending. Meanwhile, SUBTEL has suspended the decision to grant the concessions to ENTEL.

issued a ruling that went against CTC, declaring that local companies could not participate in the long-distance market (and long-distance companies could not enter the local market). CTC's preexisting long-distance concessions (including the Santiago-Vaiparaiso radio link and the Santiago-Buín radio link) were exempted from this decision. In November 1989 the Resolutive Commission, the second tier in the process, issued a ruling favorable to CTC. This ruling stipulated that local companies could enter the long-distance market and long-distance companies could enter the local service market if two conditions were met: the company entering the new market creates a subsidiary for that purpose (to identify transfer costs) and the local company modifies its system (at its expense) to provide interconnection with all long-distance carriers through a multi-carrier system.

ENTEL appealed the second ruling to the Supreme Court in December 1989. In May 1990, the Supreme Court returned the case to the Resolutive Commission, without reviewing ENTEL's appeal on the merits, on the grounds that the commission had not adequately investigated the feasibility of implementing a multi-carrier system, or the effect on competition. The court ordered the Resolutive Commission to conduct an in-depth study. In meantime, the government has developed a draft law to introduce a multi-carrier system.

Summary

After an initial boost in the 1930s, growth of the network was sluggish, prompting the government to conclude various subcontracts with CTC and to create ENTEL to provide long-distance services. Apparently, this tentative game came to halt in the early 1970s, when the government decided to play on its own. But the sector grew even more modestly than before. During this decade, the regulatory rules were clear, but rarely applied. Tariffs were highly politicized, particularly at the beginning of the decade. Investment was constrained by fiscal considerations. Finally, in the 1980s the rules changed again, with greater reliance on market forces, better regulation, and private ownership all spurring development in the sector. Deregulation and re-regulation during this period produced significant net benefits for the economy, as services expanded and a variety of new services were introduced. However, disputes erupted, increasing the transaction costs of business. There are trade-offs involved here: these costs have to be weighted against the benefits of having flexibility to cope with rapidly changing technology. Specifying boundaries more strictly would probably have institutionalized

inefficiencies since the government is unlikely to have anticipated technological changes.

IV. Credibility of and demand for regulation

Interesting as it may be, the discussion thus far does not address the puzzle as to why Chile only opted to introduce relatively efficient regulation in recent years, or why this regulatory regime was perceived to be credible by the private sector. Clearly, regulation does not develop in isolation. The credibility of regulatory contracts depends not only on the transparency and incentives built into tariff formulas and entry rules, but also on the nature of political institutions and the independence of the judiciary--the government-firm contracting problem. In turn, regulation is shaped by interest group demands and other factors--the government-interest-group contracting problem. Both issues are explored below.

Political institutions and the judiciary

Chile has experienced dramatic political changes over the past two decades. In 1970, the country elected Allende as President, the first free election of a socialist-Marxist in world history. Three years later, the military overthrew the Allende administration, and Augusto Pinochet took power until the election of Patricio Aylwin, a Christian Democrat, in 1989. These events of the 1970s and 1980s give the impression that the political institutions in Chile are unstable, which would, if true, diminish the credibility of regulation as a protection against expropriation of asset-specific utilities such as telecommunications. In a longer-term perspective, Chile's political institutions appear far more stable, suggesting that Chile could have written credible contracts and enforced them at any time.

Political institutions. Chile became independent from Spain in 1818 and adopted its first constitution in 1833.^{14/} The constitution embodied the principles of separation of powers, orderly transfer of government, and regular parliamentary elections. With brief exceptions, Chile has maintained its multiparty system and a full range of civic and political rights. As a result, Chile has elected presidents of diverse political persuasions (seen table 4).^{15/}

^{14/} Two other constitutions followed, in 1925, and in 1980 (amended in 1989).

^{15/} Historically, the Liberal and Conservative parties represented the interests of the right, mainly landowners, industrialists, importers and some professionals. The Radical party represented the interests of the Center, whose constituency was drawn from civil servants, school teachers, and urban middle class. The Communist and Socialist parties represented the left, whose main support came from the miners, industrial workers, some in the

To illustrate the resilience of Chile's political institutions, consider two examples. When Allende won the election in 1970, the opposition (mainly the Christian Democrats) feared that the new administration would change Chile's political institutions. Allende has received only 36.6 percent of the votes, just slightly more than Jorge Alessandri's 35.2 percent. When no candidate receives a majority of the vote, the constitution assigns Congress the selection of the president, normally the candidate with the largest share of the popular vote. This time, however, because of concern for the country's political institutions, the Christian Democrats agreed to support Allende in exchange for a number of congressionally mandated constitutional amendments, known as the Statute of Democratic Guarantees. The amendments affirmed, for example, the right to free association in political parties, and equal access to state-controlled media. Newspapers could be expropriated only by a law approved by an absolute majority of both houses of Congress. As it turned out, these safeguards provided formidable obstacles to efforts by the Allende administration to change the country's political institutions.

Pinochet tried to do the same thing. Three years after the military take over, the Junta appointed a council of state to reshape Chile's political institutions. A new constitution was put to a plebiscite and passed in 1980. It gave Pinochet an 8-year term. The constitution stipulated that a new plebiscite would be held before the end of March 1989 to determine whether to select a candidate proposed by the junta for 8 more years. Further, a new Congress was then to be elected, for the first time since 1973. In 1989, Chileans voted no to another term for Pinochet. Later that year, they elected a new president (Aylwin) and a new Congress, returning to democracy.^{16/} It can be argued that this shock provided reasons for consensus and reconciliation.

lower-middle class and the intelligentsia. Over time, the Christian Democratic party grew partly at the expense of the Radicals, partly by attracting a large number of the middle class, and partly by incorporating new voters, particularly peasants and urban squatters. Election outcomes have largely depended on whether the center and right were united or split.

^{16/} One legacy of the 1980 constitution, however, is that the executive branch has the right to appoint 8 senators, in addition to the 26 senators elected by popular vote. This provision was intended at the time to give the conservative forces an edge and prevent the country from ever returning to socialism.

Table 4. Popular votes in Chilean presidential elections, 1952-89

| Year | Candidate (party or coalition) | Percent of vote |
|------|-----------------------------------------------------------------------------|-----------------|
| 1952 | Carlos Ibanez (Independent) | 46.8 |
| | Arturo Matte (Right: Conservative, Liberal) | 27.8 |
| | Pedro E. Alfonso (Center: Radical) | 19.9 |
| | Salvador Allende (Left: Socialist) | 5.5 |
| 1958 | Jorge Alessandri (Right: Conservative, Liberal) | 31.6 |
| | Salvador Allende (Left: Socialist, Communist) | 28.9 |
| | Eduardo Frei (Center: Christian Democrat) | 20.7 |
| | Luis Bossay (Center: Radical) | 15.6 |
| | Antonio Zamorano (Independent: Left) | 3.3 |
| 1964 | Eduardo Frei (Center-Right: Christian Democrat, Conservative, Liberal) | 56.1 |
| | Salvador Allende (Left: Socialist, Communist) | 38.9 |
| | Julio Duran (Center-Right, Radical) | 5.0 |
| 1970 | Salvador Allende (Left: Socialist, Communist, MAPU, Radical Left) | 36.6 |
| | Jorge Alessandri (Right: Independent, National) | 35.2 |
| | Radomiro Tomic (Center: Christian Democrat) | 28.1 |
| 1989 | Patricio Aylwin, (Center-Left: Christian Democrat, Radical, Socialist, PPD) | 53.8 |
| | Hernan Buchi (Right: UDI) | 28.7 |
| | F. J. Errazuriz (Center: Independent) | 15.0 |

Source: 1952-70: Falcoff (1989); 1989: Mendez (1990).

Notwithstanding the resilience of Chile's political institutions in general, Chilean politics between 1925 and 1973 made it possible for a president to be elected by a minority of the electoral vote.^{17/} Of the five presidents elected between 1946 and 1973, only one was elected by an absolute majority--and even then, only because the right-wing candidate withdrew from the race. As a result, the president had to face an opposing majority in Congress. The tension between the two branches of government escalated following the constitutional reforms of 1958, which reduced the room for bargaining by abolishing joint electoral lists to eliminate corrupt deals among candidates of different parties at the local level (Shagart and Carey 1992).

What are the implications for the credibility of regulatory contracts of the stability of political

^{17/} From 1891 to 1925, Chile had a hybrid of a presidential, parliamentary, and assembly (congress) type of government: presidential because a president with some executive power was elected every five years, parliamentary because the cabinet remained in power only as long as it was supported by the majority of congress, and a government of congress (assembly) because the legislative branch had the greatest power. The era was also characterized by a highly fragmented political party system dominated by conservative forces. For details regarding the Chilean politics before 1925, see Arriagada (1984).

institutions, but the inherent need for compromise between the president and Congress? Both would be expected to enhance the credibility of contracts--the general stability of political institutions for obvious reasons, the need for compromise between the executive and the legislative branches because it makes laws difficult to change.^{18/}

The judiciary system versus government discretion. Chile has a tradition of an independent judiciary system that has restrained government discretion in the areas of property rights and contracts. The agrarian reform of the 1960s and the nationalization of enterprises of the early 1970s well illustrate this judicial independence. Under the constitution of 1925, the government had to pay for expropriated land in cash. Lacking the resources to meet this provision, the government passed a law in 1963 allowing compensation to be paid over a 10-year period at an annual interest rate of 4 percent, and indexing the payments for inflation. The law established a government agency (CORA) to oversee the evaluation and expropriation of property, and a system of land tribunals to settle differences between the agency and landowners. The decisions of these courts were subject to appeal through the regular court system.

As for the nationalization of enterprises during the Allende administration, it is true that Chile's 1925 constitution permitted expropriation "when the interests of the national community so require" (article 10). However, the constitution also specified the limits on such action, stating that expropriating property required "a general or special law which authorizes the expropriation for reasons of public utility or social interest, as defined by the legislation. The expropriated party will always have the right to compensation, fairly determined, taking into account the interests of both the community at large and the expropriated parties." To go around this provision, the Allende administration used an almost forgotten decree (law 520 of 1932) that allowed the president to intervene temporarily in the operation of certain industries under vaguely defined conditions--for example, when producers "of basic necessity" ceased production or "unjustifiably" produced an inadequate supply.

The administration used the decree extensively, but Congress refused to give the president the legal mandate needed to back up these requisitions. In the meantime, the comptroller general repeatedly invalidated these actions. In April 1972, the judiciary declared the seizure of several factories by their workers to be invalid. By late 1972, relations between the administration and

^{18/} Unlike Jamaica, for example, where the president can change laws relatively easily because he is always backed by a majority in parliament. See Spiller and Sampson (1993).

the Supreme Court were severely strained, with the administration insisting on the validity of its actions, and the court just as firmly insisting otherwise. In the following year, the deadlock was resolved by the military overthrow of the Allende regime.

Distributional demands and other factors

If the stability of political institutions, the nature of Chilean politics, and the independence of the judiciary system meant that the country could at any time have written and enforced credible contracts for the telecommunications sector, why were the regulatory reforms so much more successful in the 1980s than before? The question can be explored from two sides.

Why earlier reforms were less successful. Perhaps the most important explanatory factor is a difference in constituencies. Demand for telecommunications services from the 1930s through the 1970s had come almost entirely from the wealthiest classes, whereas Chilean politics until 1973 catered for the low- and middle income classes. As did other Latin American countries, Chile followed a strategy of industrialization through import substitution, price control, and direct ownership of important economic activities. Within this framework, the government not only intervened in health, housing, and education, but also in electricity, fertilizer, and steel. Telecommunications, however, was left to the private sector, which is not surprising given that policy formulation between 1938 and 1952 was in the hands of the Radical party, which drew its constituency primarily from civil servants, school teachers, and the urban middle class.

The government's interventionist mode continued into the 1950s, culminating in an economy brought to its knees by acute inflation and a foreign debt crisis. In response, Chileans elected Jorge Alessandri, a Liberal, in 1958. President Alessandri proposed a program of fiscal restraint, credit restrictions, a unified exchange rate, and import liberalization to keep inflation down. He also proposed to free prices and promote competition. However, because the Radicals were the largest party in Congress at that time, Alessandri had to compromise by submitting reforms that supplemented rather than supplanted previous policies. In the telecommunications sector, reforms fell short as well. CTC's contract was improved in 1958 by defining the company's rate of return, but the contract remained incomplete in its failure to resolve the threat of government intervention.

The Christian Democrats won the election in 1964, returning in large measure to policies in the Radical mold. During their term, Chile experienced a wave of nationalization (Chileanization) and agrarian reform. These were not surprising policies for a party that since its

inception in 1941 had grown partly at the expense of the Radicals and partly by incorporating new voters, particularly peasants and urban squatters. Nor is it surprising that the 1967 agreement with CTC stipulated the sale of 49 percent of the company to CORFO, rather than canceling the clause that permits government intervention.

Two other factors also contributed to the relative neglect of the telecommunications sector until the late 1970s. The technology had not yet advanced to the point where telecommunications services were essential for business, as they are today. Also the private sector was still relatively modest in size and influence, and small business shared, to a large extent, the values of landlord oligarchy, because of cultural homogeneity and a perceived common economic interest with large business.

Why recent regulatory reforms have been more successful. The military regime that ruled Chile between 1973 and 1989 introduced sweeping structural reforms in the economy that still shape it today. The foundation of this policy is an open economy, in which market forces and the private sector are the main pillars. The government introduced substantial trade and price liberalization and privatized public enterprises, banks, pension funds, and even health and education delivery. For public enterprises that were not privatized, operations were commercialized, and a number of regulatory reforms were introduced. While all these reforms were taking shape, the telecommunications sector continued to lag.

Reform of the telecommunications sector gained momentum in the 1980s, with notable success. Several reasons account for the change. Broad support emerged during this period for better telecommunications services. Much of this demand arose from a larger, more entrepreneurial private sector and coincided with an increase in importance of telecommunications services for businesses.

To be sure, the ruling coalition under the military regime consisted mainly of members of the armed forces and the traditional upper classes. However, with the help of a group of economists (known as Chicago boys for their neoclassical leanings), policies of economic liberalization, retrenchment of public sector employment, and privatization helped create an important class of entrepreneurs, made up of small businesspeople, shopkeepers, and farmers, as well as larger entrepreneurs.^{19/} What makes the new bourgeoisie an important influence in the

^{19/} According to Vald   (1989), the technocratic elite represented the political counterpart of the emerging class of entrepreneurs. From their policymaking positions, the Chicago Boys supported the private sector in numerous ways, including simplifying the custom systems and providing the necessary credit to start up business.

telecommunications sector is that it includes these new groups: members of the middle-class who turned from public sector employment to other employee positions to become entrepreneurs, in commerce, transportation, and services; local entrepreneurs, who formed partnerships with international investors in new conglomerates in such dynamic activities as fishing, fruits, wood, paper, and mining; and market entrepreneurs, in the area of agricultural exports and other areas (Montero, 1990). Collectively, the three groups of entrepreneurs constitute an important political force in Chile. And they--and every other important economic agent--depend heavily dependent on telecommunications to remain competitive.

V. Conclusion

This paper analyzed the relationship between the performance of the telecommunications sector in Chile, the successive regulatory episodes and the factors that lent credibility of contracts. It argued that, before 1958, CTC's contract left too many important details uncovered to persuade the company to invest adequately. That deficiency eventually led the government to better define the contract and to create its own telephone company to provide long-distance services. Throughout this period, the government's lack of interest in the growth of the sector stemmed from the fact that those most interested in expanding telecommunications services were not important voting blocks. In the 1970s the government substituted public for private ownership to resolve problems in the sector, but the new arrangement led to an even slower growth, which was attributable to a shift in ideology toward the private sector, tight fiscal policy, and the limited demand for telecommunications services by a small but growing private sector. Beginning in the 1980s and continuing today, technological changes and the emergence of a stronger business class provided the impetus for developing the sector. Correspondingly, the sector grew substantially, with privatization providing needed fresh capital and better regulation providing a fair rate of return to the private sector. The credibility of contracts in Chile derives from the country's long standing tradition of stable political institutions and independent judiciary. The specificity and fairness of the regulatory rules, and the difficulty of changing the laws also contribute.

Notwithstanding the success of the recent regulatory reforms in stimulating expansion and increasing welfare, it was argued that Chile could have done better by more clearly defining market boundaries and strengthening its regulatory bodies, thereby reducing the transaction costs resulting from dispute settlements in courts. The counterargument is that specifying market

boundaries could have resulted in inefficient contracts, because government could have erred in anticipating technological changes. In view of the difficulty in changing laws in Chile, the cost of such commitment could have been high.

The analysis of the experience of the telecommunications sector in Chile supports the following hypotheses:

- Stable political institutions and independent judiciary increase the capacity of governments to write credible contracts and enforce them. However, this is a necessary but not sufficient condition; It takes effective interest group pressure to get governments to act. Short of such pressure, reform attempts to develop the telecommunications sector may fail.
- Private sector investment depends not only on the credibility of contracts, but also on specific regulations and conflict resolution mechanisms governing such important issues as tariffs and entry rules. Failure to specify such regulations may preclude private sector commitment in the first place.
- Deregulation and privatization require clear conflict resolution mechanisms and antitrust legislation, especially where governments do not want to lock themselves into a specific market configuration because laws are difficult to change.

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